

**IN THE SPECIFICATION:**

Please replace paragraph [0002] with the following amended paragraph:

[0002] In the production of integrated circuits, many processing methods require one or more reactive chemicals or precursors to be deposited onto a substrate in an atmospherically-controlled heated reactor or chamber. The precursors typically are converted from a solid or liquid state into a gaseous or vapor state to achieve a high degree of uniformity by vapor deposition. The precursor vapor, once generated, is directed into a reaction chamber and forms a deposited layer on the substrate. This process is typically called chemical vapor deposition or "CVD". The deposited precursor chemical may form fine crystalline or amorphous layers which are required for creating microcircuits on the substrate.

Please replace paragraph [0006] with the following amended paragraph:

[0006] Figure 1 is a graphical illustration showing the standard flow response of vaporized liquid of a typical liquid injection system. The transient state due to the inherent rise time effect of the LFM[[, as]] is indicated by [[t<sub>r</sub>]] rise time, before liquid stabilizes to set point flow varies from liquid to liquid and from chamber to chamber. The transient film property at the film interface where film starts to grow can not be controlled and results in uncontrolled and inconsistent dopant concentration.

Please replace paragraph [0009] with the following amended paragraph:

[0009] Therefore, there is a need for a process gas delivery system that improves dopant concentration control, particularly at film interfaces. More specifically, there is a need for accurate control of a vaporized liquid supply.

Please replace paragraph [0033] with the following amended paragraph:

[0033] During a second period, vaporizers A and C remain in processing mode while vaporizer B is switched to divert mode. Vaporizer B is switched to the second input to receive carrier gas from the divert carrier gas source at 6 slm, and the vaporizer output from vaporizer B is diverted to the foreline of the exhaust system. Vaporizers A and C receive carrier gas from the process carrier gas source at 3 slm each because vaporizer B has switched its input to the divert carrier gas source. During the second period, a liquid precursor B, such as a dopant, may be introduced into the vaporizer for liquid precursor B by opening the LFM that controls flow of liquid precursor B. Preferably ~~preferably~~, the duration of the second period is sufficiently long for stabilization of the liquid precursor flow and vaporization. The concentration gradient of the vaporized precursor B due to the rise time of the LFM is thus eliminated from processing in the chamber because the vaporizer output during the rise time of the LFM is diverted to the foreline of the exhaust system.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Figure 4 is a graphical illustration of an example process for depositing a silicon oxide film having step-wise dopant concentration onto a substrate in the chamber utilizing one embodiment of the individual divert gas delivery system as shown in Figure 2. The liquid precursors include TEOS, TEB and TEPO ~~TEP~~, and three vaporizers are utilized, one vaporizer for each liquid precursor. As shown in Figure 4, at  $t_1$  liquid precursor TEOS is introduced (*i.e.*, LFM opened) into a first vaporizer operating in divert mode until vaporization of liquid precursor TEOS is stabilized at  $t_3$ , typically in about 6-10 seconds. At  $t_3$ , the first vaporizer is switched to process mode to direct vaporized process gas containing vaporized TEOS into the chamber to form a layer of film on a substrate in the chamber. At  $t_2$ , the liquid precursor TEB is introduced into a second vaporizer operating in divert mode until vaporization of liquid precursor TEB is stabilized at  $t_5$ , typically in about 6-10 seconds. At  $t_5$ , the second vaporizer is switched to process mode to direct vaporized process gas containing vaporized TEB into the chamber to

dope the silicon oxide film with boron. At  $t_4$  liquid precursor TEPO is introduced into a third vaporizer operating in divert mode until vaporization of liquid precursor TEPO is stabilized at  $t_6$ , typically in about 6-10 seconds. At  $t_6$ , the third vaporizer is switched to process mode to direct vaporized process gas containing vaporized TEPO into the chamber to dope the silicon oxide film with phosphorus in addition to the boron dopant to form BPSG

Please replace paragraph [0040] with the following amended paragraph:

[0040] The individual divert gas delivery system is capable of providing vaporized precursors into a process chamber without the rise time effects or concentration gradient typically associated with LFMs that control flow of liquid precursors into vaporizers. Also, the individual divert gas delivery system is capable ~~to~~ of providing precise dopant concentration into a processing chamber for forming films having dopant content, such as BSG, PSG, BPSG, and other doped films. The liquid precursor for the dopant can be introduced into a vaporizer in divert mode for a preset time period sufficient for stabilized vaporization of the dopant precursor, typically 6-10 seconds, before the dopant is needed in the process chamber. Thus, when the dopant is needed and introduced into the chamber, the dopant vaporization is stabilized, and the resulting doped film exhibits substantially step-wise dopant concentration profiles.